



EPA's CLEAN POWER PLAN

South Dakota Public Utilities Commission

July 31, 2014



EPA's Clean Power Plan

Proposed June 2, 2014.

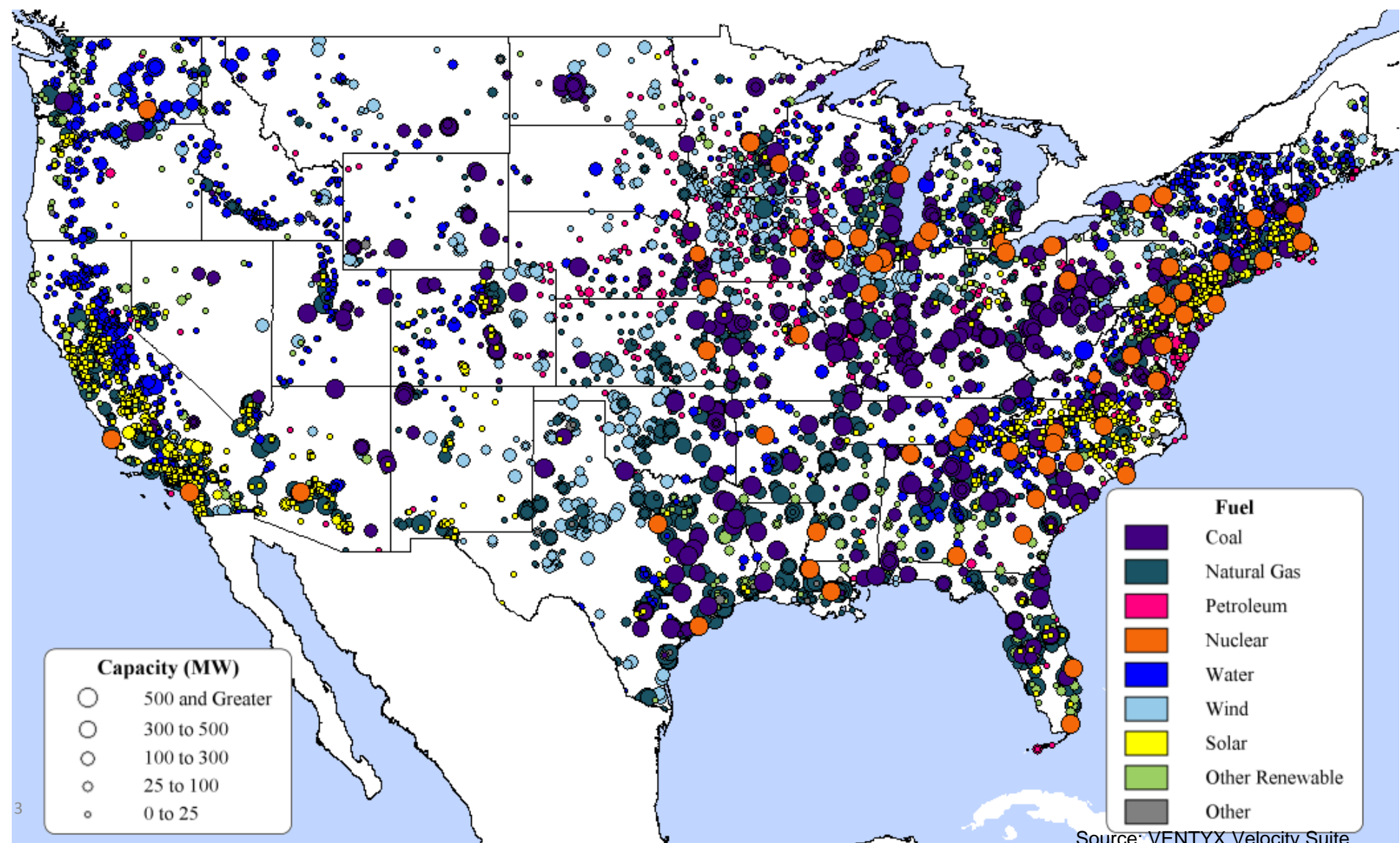
Published in Federal Register June 18, 2014, which began 120 public comment period.

Will reduce CO₂ emissions from the power sector by approximately 30% by 2030 from 2005 levels.





U.S. Electricity Generation Capacity in 2013 – 3,000 units covered



Source: VENTYX Velocity Suite



Summary of the Proposal

The proposed rule establishes individual state goals in lbs CO₂/MWh based on a consistent national formula.

State goals are based on the Best System of Emissions Reduction (BSER) = four building blocks.

EPA FACT SHEET: Clean Power Plan

NATIONAL FRAMEWORK FOR STATES
SETTING STATE GOALS TO CUT CARBON POLLUTION



State Goal Building Blocks

Building Blocks Used to Set State Goals	Examples of State Compliance Measures
1. CO2 Emission Reductions in Coal Fleet - 6%	<ul style="list-style-type: none">• Efficiency improvements• Co-firing with natural gas• Carbon capture & storage• Coal retirements
2. Re-Dispatch to Existing Natural Gas Combined Cycle (NGCC) Plants - 70%	<ul style="list-style-type: none">• Utilize existing NGCC units at a higher capacity• New NGCC units
3a. Renewable Energy (non-hydro) - Varies by state based on region 3b. Nuclear Energy - Varies by state based on capacity	<ul style="list-style-type: none">• New renewable energy (including hydro and biomass)• New nuclear energy• Relicensing of at-risk nuclear facilities
4. Demand-Side Energy Efficiency - 1.5% per year	<ul style="list-style-type: none">• Residential, commercial, agricultural, and industrial energy efficiency• Transmission efficiency



State Goal-Setting Formula

First, the historical fossil emission rate is set using 2012 emission rate data (lbs CO₂/MWh):

$$\frac{(\text{Coal gen.} \times \text{Coal emission rate}) + (\text{OG gen.} \times \text{OG emission rate}) + (\text{NGCC gen.} \times \text{NGCC emission rate})}{\text{Total Fossil Generation}}$$

The building blocks are then applied to the formula above (lbs CO₂/MWh):

$$\frac{(\text{Coal gen.} \times \text{Coal emission rate}) + (\text{OG gen.} \times \text{OG emission rate}) + (\text{NGCC gen.} \times \text{NGCC emission rate})}{\text{Total Fossil Generation} + \text{RE MWh} + \text{N MWh} + \text{EE MWh}}$$

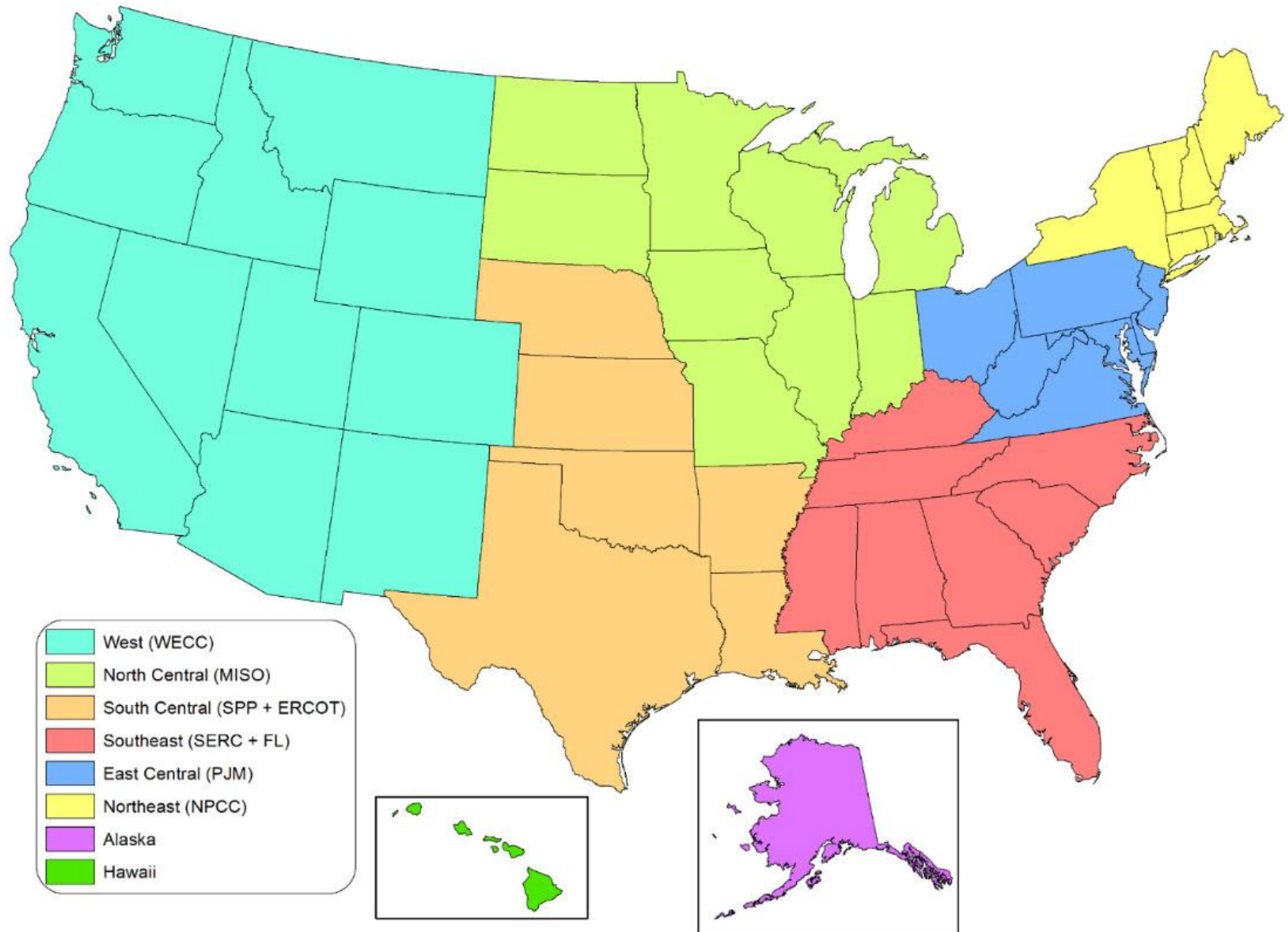


State Goals in lbs CO₂/MWh

State	2012 Rate with RE	Final Goal	% Reduction
CO	1,714	1,108	35%
MT	2,246	1,771	21%
ND	1,994	1,783	10%
SD	1,135	741	35%
UT	1,813	1,322	27%
WY	2,115	1,714	19%

Note: Does not include affected facilities in Indian Country at this time.

Renewable Energy Regions





Renewable Energy Targets By Region

Region	Regional RE Generation Targets
Alaska	10%
East Central	16%
Hawaii	10%
North Central	15%
Northeast	25%
South Central	20%
Southeast	10%
West	21%



Energy Efficiency Targets

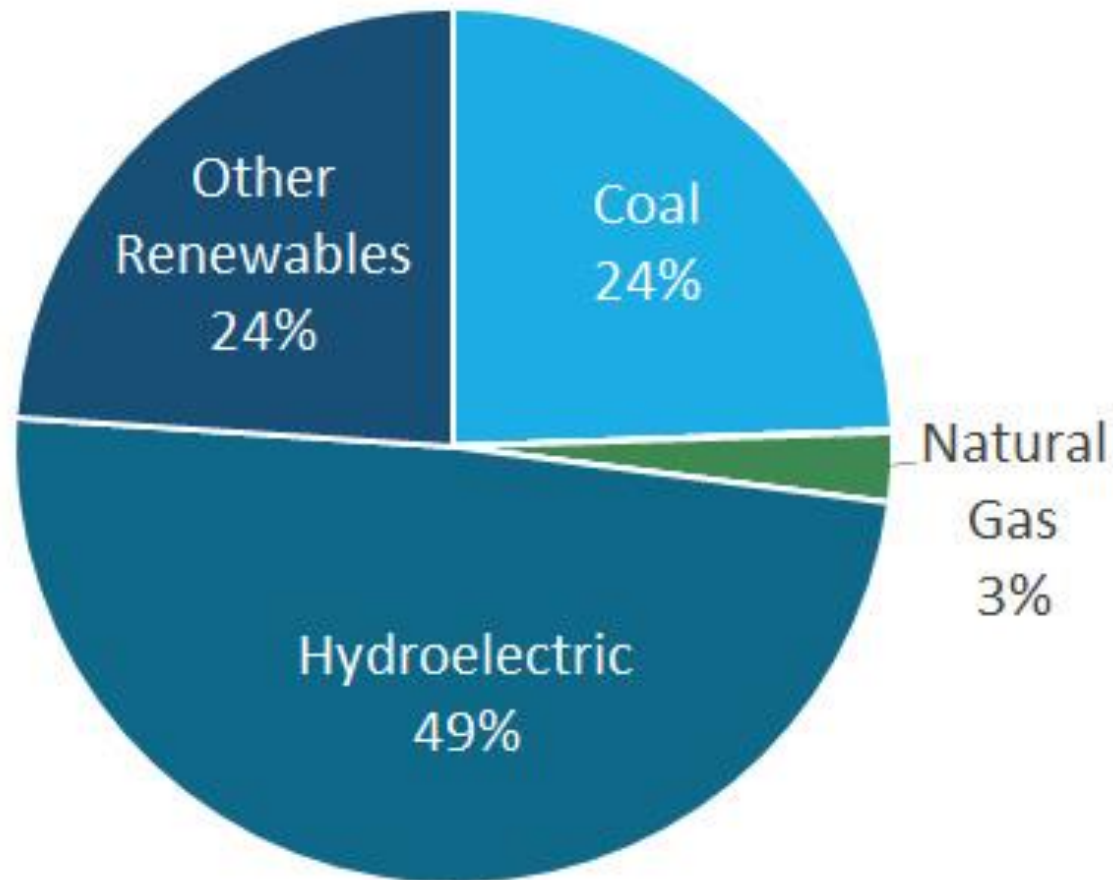
South Dakota goal is based on ramping up energy efficiency from its 2012 level of 0.13% starting in 2017 and reaching the 1.5% goal in 2024, which is held for every year thereafter through 2030.

This is projected to achieve a cumulative savings of 10.52% in 2030 equal to 1,362 GWh.

Demonstration of compliance is in GWh of net cumulative savings as a % of retail sales.



Energy Generation in South Dakota



Electricity Generation, 2012 (EIA)



Affected Facilities in South Dakota

Facility	Nameplate Capacity	Type	# of Units	Other
Ben French	25MW	Coal Steam	5	4 of 5 are low utilization natural gas turbines
Big Stone	456MW	Coal Steam	1	Utilizes co-generation
Deer Creek	170MW 154MW	NGCC NGCC	2	2012 capacity factor was 1%



State Plans

States have broad flexibility to implement measures across the power sector to get reductions.

They can rely on EPA's building blocks, or on other measures.

They can work individually, or with other states.

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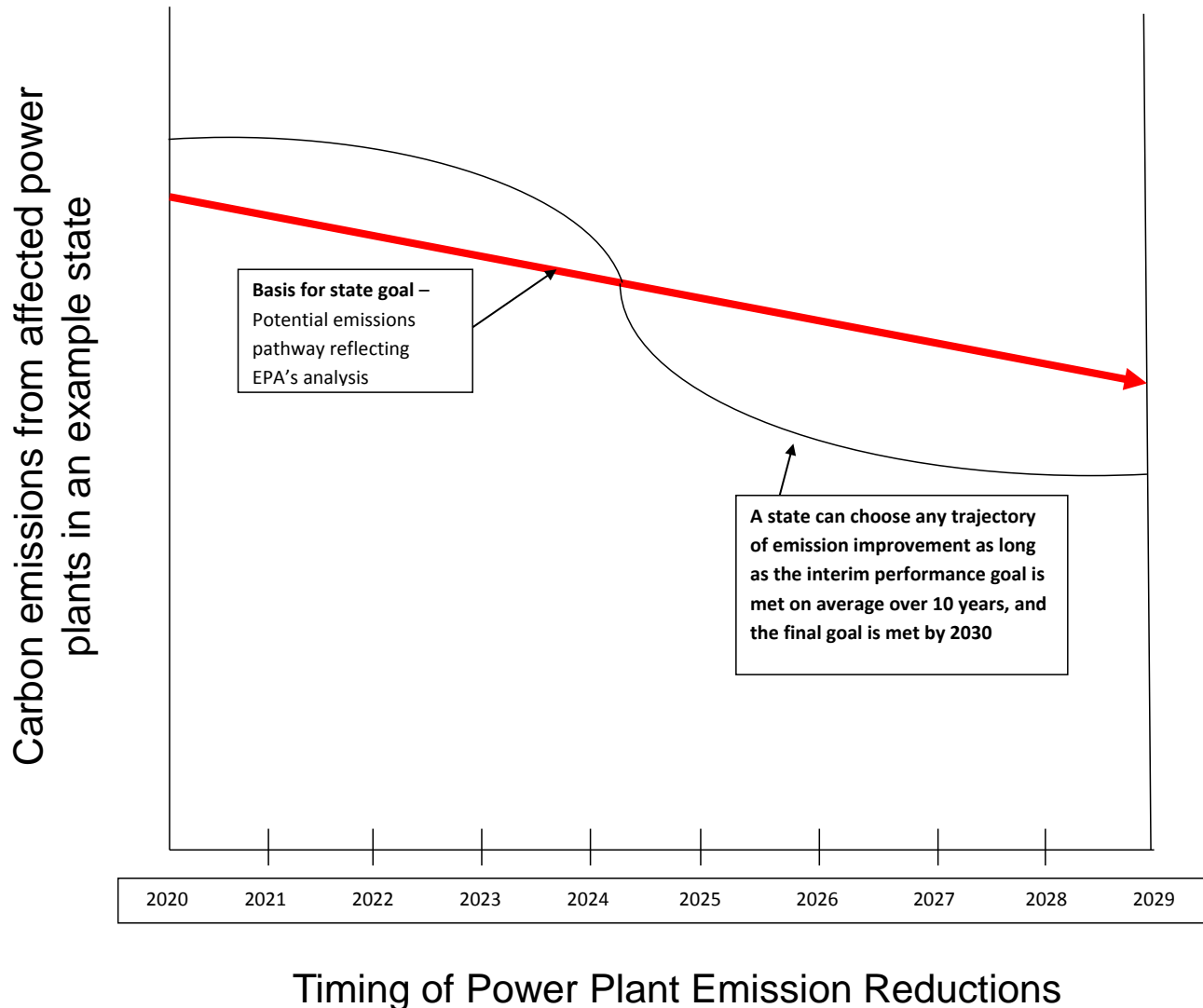
THE ROLE OF STATES

STATES DECIDE HOW THEY WILL CUT CARBON POLLUTION



States Have Flexibility

As an example, states could do less in the early years, and more in the later years, as long as on average it meets the goal





Deadline for State Plans

States must submit an initial plan by June 30, 2016

State may request a one year extension for individual state plans to June 30, 2017

State may request a two-year extension for multi-state plans to June 30, 2018

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THE ROLE OF STATES

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Next Steps

See the following website for more information and details on how to comment on the proposed rule:

<http://www2.epa.gov/carbon-pollution-standards>

EPA is holding 4 public hearings the week of July 28:

Denver, Atlanta, Pittsburgh and Washington, D.C.

The 120-day public comment period goes from June 18 through October 16.

Conduct outreach to traditional and non-traditional stakeholders.